L Number	Hits	Search Text	DB	Time stamp
3	10155	(detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:39
4	4	((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 435/283.1.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:14
5	27	((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
6	962	(detector or detection) near4 angle and (detection or detector) same mirror near5 (move$5 or adjust$4 or rotat$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:27
7	509	((detector or detection) near4 angle and (detection or detector) same mirror near5 (move$5 or adjust$4 or rotat$4)) and mirror near4 angle	USPAT; US-PGPUB; DERWENT	2004/04/12 11:27
8	3180	((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and (multiple or second or two) near3 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:35
9	27	(((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:29
10	27	((((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.) and 422/82.05.ccls.) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
11	0	(((((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.) and 422/82.05.ccls.) and 422/82.05.ccls.) not (((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
12	15	(((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and (multiple or second or two) near3 (detector or detection)) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
13	4	(multiple or second or two) near3 (detector or detection) same (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:41
14	136664	(multiple or second or two) near3 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
15	27739	((multiple or second or two) near3 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4 or rotat$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:39
16	21672	((multiple or second or two) near3 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
17	100630	(multiple or second or two) near2 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
18	17313	((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
19	55	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
20	0	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (detector or detection) same (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:41

21	4	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
22	4461	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelength)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
23	1682	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelength near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
24	26	((((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelength near3 (different or second))) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43

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6	962	(detector or detection) near4 angle and (detection or detector) same mirror near5 (move$5 or adjust$4 or rotat$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:27
7	509	((detector or detection) near4 angle and (detection or detector) same mirror near5 (move$5 or adjust$4 or rotat$4)) and mirror near4 angle	USPAT; US-PGPUB; DERWENT	2004/04/12 11:27
8	3180	((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and (multiple or second or two) near3 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:35
9	27	(((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:29
10	27	((((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.) and 422/82.05.ccls.) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
11	0	(((((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.) and 422/82.05.ccls.) and 422/82.05.ccls.) not (((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and 422/82.05.ccls.)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
12	15	(((detector or detection) near4 angle and angle near5 (move$5 or adjust$4 or rotat$4)) and (multiple or second or two) near3 (detector or detection)) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
13	4	(multiple or second or two) near3 (detector or detection) same (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:41
14	136664	(multiple or second or two) near3 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
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16	21672	((multiple or second or two) near3 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
17	100630	(multiple or second or two) near2 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
18	17313	((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
19	55	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
20	0	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (detector or detection) same (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:41

21	4	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
22	4461	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelength)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
23	1682	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelength near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
24	26	((((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move$5 or adjust$4)) and (wavelength near3 (different or second))) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43

US-PAT-NO: 6118532

DOCUMENT-IDENTIFIER: US 6118532 A

TITLE: Instrument for determining static and/or dynamic light scattering

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Abstract Text - ABTX (1):
The present invention relates to an instrument for determining the light scattered by a sample comprising a platform rotatable about an axis of rotation; a sample holder disposed along the axis of rotation; a light source for producing a beam of coherent light that can be focused on a sample in the sample holder; and a **plurality of detectors** disposed and rotatable about the axis of rotation and adapted so that each **detector can be adjusted** to focus on a common point along the axis of rotation by reference to the beam.

Brief Summary Text - BSTX (2):
The present invention relates to an instrument for determining static and/or dynamic light scattering. More particularly, this instrument involves a light source for producing coherent light and a **plurality of detectors**.

Brief Summary Text - BSTX (9):
Nevertheless, for many samples simultaneous measurement of static and dynamic light scattering using consecutive measurements from several scattering angles represents a problem. Satisfactory results are not always obtained in consecutive measurements whether due to sample instability caused by jelling, polymerization, and/or crystallization, or due to other limitations such as the measuring time available for each sample. There are also standard tests where static and dynamic light scattering are measured consecutively from different scattering angles, for example, in measuring particle size, without the test results being necessarily affected. The scattered light may be observed simultaneously by a **plurality of detectors from different viewing angles**. See,

German Patent 38 13 718 A1. This, however, fails to provide a solution in that it is extremely costly to **adjust a plurality of detectors** so that each detector receives scattered light from the same scattering volume. Moreover, the number of scattering angles available for measuring is limited by the number of the detectors used around the sample.

Brief Summary Text - BSTX (11):

An object of the invention is to develop an instrument for determining static and/or dynamic light scattering allowing simultaneous measurement of a sample in a solution from a plurality of scattering **angles by means of a plurality of detectors, whereby simple but accurate adjustment of the detectors** can be made.

Brief Summary Text - BSTX (12):

This object is achieved with an instrument for determining static and/or dynamic light scattering comprising a light source for producing a laser beam directed at a sample contained in a cylindrical cell, the sample being located in the center of a rotary platform, coaxially to its axis of rotation and perpendicularly to the laser beam, characterized in that a **plurality of detectors are arranged at any angles** next to one another for measuring the light scattered by the sample, and each **detector has an adjusting device with which the detectors on the rotary platform can be adjusted in their vertical or horizontal, such that the detector** aligns with the laser beam facing towards the test cell, zero-degree position in relation to the laser beam with the help of the laser beam so that after **adjustment all detectors** are aligned to a common point in the center of rotation.

Detailed Description Text - DETX (4):

the rotary platform, the viewing **angle of the detectors** can be changed by any angular value while preserving the **adjustment** to a common point in the center of rotation. Up to 30, preferably 4 to 16 detectors, arranged 5.degree. to 30.degree., preferably 10.degree. to 20.degree., apart can be advantageously secured on a rotary platform.

Detailed Description Text - DETX (10):

FIG. 4 shows the instrument according to this invention with a laser source 1, a focusing device 2, and a sample holder with test cell, which may be of cylindrical shape, and sample 3, surrounded by a liquid 4 with a refraction index equal to that of the cell glass, contained in a container 5 made of a transparent material that also has a refraction index of the test cell glass. A **plurality of detectors** (8.1 through 8.10), each **detector having an adjusting** device (9.1 through 9.10) are located on swivel arm 6 of rotary platform 7, in this case 15.degree. apart. The detectors can be either apertured detectors or fiber detectors.

Claims Text - CLTX (1):

1. An instrument for determining light scattering, comprising a light source for producing a laser beam directed at a sample contained in a test cell, the sample being located in the center of a rotary platform, coaxially to its axis of rotation and perpendicularly to the laser beam, wherein a **plurality of detectors are arranged at any angles** next to one another for measuring the light scattered by the sample, and each **detector has an adjusting device with which the detectors on the rotary platform can be adjusted** in their zero-degree position in relation to the laser beam, the zero degree position being that position initially obtained for each detector by bringing the detector into axial alignment with the laser beam, so that the laser beam acts as a reference axis parallel to the plane of the rotary platform and perpendicular to the axis of rotation of the rotary platform, so that after **adjustment all detectors** are aligned to a common point in the center of rotation.

Claims Text - CLTX (6):

6. The instrument of claim 1 wherein the **detectors arranged on the platform can be adjusted** in their respective zero-degree positions using the laser beam by aligning all of the detectors to the common point located centrally on the platform.

Claims Text - CLTX (18):

18. An instrument for determining the light scattered by a sample comprising a platform rotatable about an axis of rotation; a sample holder disposed along the axis of rotation; a light source for producing a beam of coherent light that can be focused on a sample in the sample holder; and a **plurality of detectors** disposed and rotatable about the axis of rotation and each **detector has an adjusting device with which detectors can be adjusted** in their zero-degree position to focus on a common point along the axis of rotation by reference to the beam.